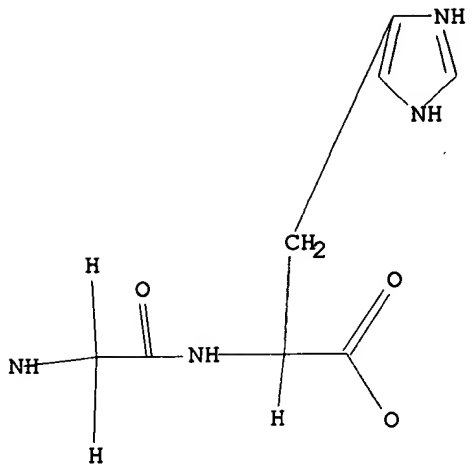
09/190,857

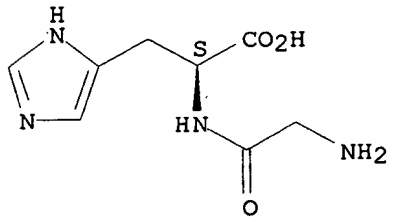
```
     (FILE 'HOME' ENTERED AT 08:38:05 ON 03 SEP 2000)

     FILE 'REGISTRY' ENTERED AT 08:38:09 ON 03 SEP 2000
L1             SCREEN 1006 AND 1051
L2             STRUCTURE UPLOADED
L3             QUE L2 AND L1
L4           0 S L3 FULL

     FILE 'CAPLUS, EMBASE, BIOSIS, MEDLINE, WPIDS' ENTERED AT 08:39:20 ON 03
     SEP 2000
L5       15335 S (GLY?)(2A)(HIS?)
L6        1788 S GLY-HIS
L7       15335 S L5 OR L6
L8          79 S L7 AND (DI)(2A)(PEPTID?)

     FILE 'REGISTRY' ENTERED AT 08:41:32 ON 03 SEP 2000
             E GH/CN

     FILE 'REGISTRY' ENTERED AT 08:42:02 ON 03 SEP 2000
             E GH/CN

     FILE 'CAPLUS, EMBASE, BIOSIS, MEDLINE, WPIDS' ENTERED AT 08:42:35 ON 03
     SEP 2000
L9      167322 S (GH OR HGH OR H-GH OR GROWTH HORMONE?)
L10      96128 S ELECTOTRANSPORT? OR IONOPH?
L11        360 S L9 AND L10
L12          0 S L8 AND L11
L13          0 S L11 AND (DI)(2A)(PEPTID?)
L14          0 S L10 AND L8
L15        661 S ELECTROTRANSPORT?
L16      96788 S L10 OR L15
L17          0 S L16 AND L8
L18        365 S L9 AND L16
L19          2 S L7 AND L18
L20          1 DUP REM L19 (1 DUPLICATE REMOVED)
L21          0 S L8 AND TRANSDERM?
L22         15 S L7 AND TRANSDERM?
L23         11 DUP REM L22 (4 DUPLICATES REMOVED)
L24       9423 S (GLY?)(2A)(HIS OR HISTID?)
L25       2598 S (HIS-GLY OR GLY-HIS)
L26       9423 S L24 OR L25
L27     120769 S (TRANSDERM? OR ELECTROTRANSPORT? OR IONOPH?)
L28         24 S L26 AND L27
L29         19 DUP REM L28 (5 DUPLICATES REMOVED)

     FILE 'REGISTRY' ENTERED AT 08:59:40 ON 03 SEP 2000
L30          1 S 2497-02-1/RN
L31          1 S  2489-13-6/RN

     FILE 'CAOLD, CAPLUS' ENTERED AT 09:01:19 ON 03 SEP 2000
L32        208 S L31
L33      47304 S (TRANSDERM? OR ELECTROTRANSPORT? OR IONOPH?)
L34          9 S L32 AND L33
L35          9 DUP REM L34 (0 DUPLICATES REMOVED)
```

L2 STR



L31 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2000 ACS
RN **2489-13-6** REGISTRY
CN L-Histidine, glycyl- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Histidine, N-glycyl- (6CI, 7CI)
CN Histidine, N-glycyl-, L- (8CI)
CN L-Histidine, N-glycyl-
OTHER NAMES:
CN Glycyl-L-histidine
CN Glycylhistidine
CN N-Glycylhistidine
FS STEREOSEARCH
DR 25799-75-1
MF C8 H12 N4 O3
CI COM
LC STN Files: BEILSTEIN*, BIOSIS, CA, CAOLD, CAPLUS, CHEMCATS, CSCHEM, GMELIN*, IFICDB, IFIPAT, IFIUDB, MEDLINE, TOXLINE, TOXLIT, USPATFULL
(*File contains numerically searchable property data)

Absolute stereochemistry.



193 REFERENCES IN FILE CA (1967 TO DATE)
41 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
193 REFERENCES IN FILE CAPLUS (1967 TO DATE)
15 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L29 ANSWER 5 OF 19 CAPLUS COPYRIGHT 2000 ACS
AN 1993:160230 CAPLUS
DN 118:160230
TI Simulated quantitative and qualitative isotachophoretic indexes of 73 amino acids and peptides in the pH range 6.4-10
AU Hirokawa, Takeshi; Kiso, Yoshiyuki; Gas, Bohuslav; Zuskova, Iva; Vacik, Jiri
CS Appl. Phys. Chem., Fac. Eng., Hiroshima Univ., Kagamiyama 1, Higashi-Hiroshima, 724, Japan
SO J. Chromatogr. (1993), 628(2), 283-308
CODEN: JOCRAM; ISSN: 0021-9673
DT Journal
LA English
AB Qual. and quant. isotachophoretic indexes of 73 amino acids, dipeptides and tripeptides were simulated under 24 leading electrolyte conditions covering the pH range 6.4-10. The RE values and time-based zone lengths are tabulated together with the abs. mobility (m0) and pKa values used. The leading electrolyte used was 10 mM HCl and the pH buffers were imidazole, tris(hydroxymethylamino)methane, 2-amino-2-methyl-1,3-propanediol and ethanolamine. The simulated indexes will be useful in the assessment of the separability and detn. of the listed and related compds.
IT Electrophoresis and **Ionophoresis**
(isotachophoresis, of amino acids and peptides, simulated quant. and qual. indexes of)
IT 51-35-4, Hydroxyproline 52-90-4, Cysteine, analysis 56-40-6, Glycine, analysis 56-41-7, Alanine, analysis 56-45-1, Serine, analysis 56-84-8, Aspartic acid, analysis 56-85-9, Glutamine, analysis 56-86-0, Glutamic acid, analysis 56-89-3, Cystine, analysis 60-18-4, Tyrosine, analysis 61-90-5, Leucine, analysis 63-68-3, Methionine, analysis 63-91-2, Phenylalanine, analysis 70-26-8, Ornithine 71-00-1, Histidine, analysis 72-18-4, Valine, analysis 72-19-5, Threonine, analysis 73-22-3, Tryptophan, analysis 73-32-5, Isoleucine, analysis 74-79-3, Arginine, analysis 80-60-4, .alpha.-Amino-n-butyric acid 107-35-7, Taurine 107-95-9, .beta.-Alanine 147-85-3, Proline, analysis 300-39-0 305-84-0, .beta.-Alanylhistidine 556-33-2, Triglycine 556-50-3, Diglycine 637-84-3, Tetraglycine 658-79-7 686-50-0, Leucylglycine 687-69-4, Alanylglycine 704-15-4, Glycyl-L-proline 837-83-2, Glycyl-L-prolyl-L-alanine 869-19-2, Glycyl-L-leucine 927-21-9 968-21-8, L-Leucyl-L-tyrosine 1187-50-4, L-Leucylglycylglycine 1948-31-8 1963-21-9, Glycylvaline 1999-33-3, Glycylasparagine 2390-74-1, Glycyltryptophan 3061-90-3, Alanylphenylalanine 3063-05-6, Leucylphenylalanine 3303-31-9, Leucylleucine 3303-34-2, Alanylleucine 3303-41-1, Alanylserine 3303-45-5, Alanylvaline 3321-03-7, Glycylphenylalanine 3695-73-6, Glycylalanine 3887-13-6, Hexaglycine 4294-25-1, DL-Leucylglycyl-DL-phenylalanine 4306-24-5, Glycyl-L-leucyl-L-tyrosine 5874-90-8, L-Alanyl-L-alanyl-L-alanine 6234-26-0, Glycylglycyl-L-phenylalanine 6620-98-0 7093-67-6, Pentaglycine 7361-42-4 7361-43-5, Glycylserine 7758-33-0, **Glycyl-L-histidylglycine** 10329-75-6 13116-21-7, Glycyl-L-phenylalanyl-L-phenylalanine 13588-95-9 14486-05-6, Alanylmethionine 19461-37-1 19461-38-2, Glycylisoleucine 20274-89-9, Glycylglycyl-L-valine 31796-57-3, Alanylasparagine 39537-33-2, Alanyl-.alpha.-amino-n-butyric acid 69242-40-6, Glycylglycyl-L-isoleucine 71184-74-2, Glycylglycyl-D-leucine

78681-93-3, Glycyl-DL-leucyl-DL-alanine 82267-71-8, DL-Alanyl-DL-leucylglycine
RL: ANST (Analytical study)
(simulated quant. and qual. isotachophoretic indexes of)

L29 ANSWER 14 OF 19 CAPLUS COPYRIGHT 2000 ACS
AN 1990:115188 CAPLUS
DN 112:115188
TI Capillary zone electrophoresis of histidine-containing compounds
AU Stover, Frederick S.; Haymore, Barry L.; McBeath, Randy J.
CS Cent. Res. Lab., Monsanto Co., St. Louis, MO, 63167, USA
SO J. Chromatogr. (1989), 470(1), 241-50
CODEN: JOCRAM; ISSN: 0021-9673
DT Journal
LA English
AB Capillary zone electrophoresis was tested for the sepn. of angiotensins, cationic heptapeptides, and model histidine derivs. Good sepn. efficiencies were seen for peptides and model compds. with neg.-to-small pos. net charges. For net charge greater than +2, the addn. of putrescine to pH 6 buffer greatly suppresses ion exchange at anionic sites on fused silica. When operating at pH values where histidine groups are neutral, the addn. of Zn2+ allows sepns. based on metal, rather than proton, binding. Sepn. efficiencies and relative migration times are dependent on capillary length when ion-exchange behavior occurs.
IT Electrophoresis and **Ionophoresis**
(zone, capillary, of histidine-contg. compds.)
IT Electrophoresis and **Ionophoresis**
(zone, capillary, app., for sepn. of histidine-contg. compds.)
IT 71-00-1, L-Histidine, analysis 71-00-1D, L-Histidine, derivs. 484-42-4
1499-46-3, L-Histidine methyl ester 2489-13-6, **Glycyl**-L-**histidine** 2497-02-1, N-Acetyl-L-histidine 4474-91-3
13602-53-4, Angiotensin III 125676-70-2 125676-71-3 125676-72-4
RL: PROC (Process)
(sepn. of, by capillary zone electrophoresis)

L20 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2000 ACS DUPLICATE 1
1999:325776 Document No. 130:357166 Buffered drug formulations for transdermal **electrotransport** delivery. Leung, Iris Ka Man; Cormier, Michel J. N.; Sendelbeck, Sara Lee; Muchnik, Anna (Alza Corporation, USA). PCT Int. Appl. WO 9924015 A1 19990520, 51 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1998-US23411 19981103. PRIORITY: US 1997-969217 19971112.

AB Buffered drug formulations for transdermal **electrotransport** delivery are disclosed. The formulations utilize a dipeptide as a buffer and allow for more efficient **electrotransport** delivery of drugs, e.g., polypeptide drugs, via the transdermal route. A sufficient quantity of **His-Gly** from was added to distd. water to make a 12.5 mM buffer soln. having a pH of 21 6.75. A human **growth hormone** (**hGH**) formulation obtained from contained **growth hormone**, mannitol and glycine in the following proportions; 1:5:1. The original **hGH** formulation was subjected to purifn. (diafiltration against 12.5 mM **His-Gly** buffer to remove the mannitol and glycine) and the **hGH** concn. was adjusted to about 20 mg/mL via ultrafiltration. Aliquots of 250 .mu.L of the resulting **hGH** stock soln. were placed into Eppendorf tubes, each contg. 5 mg (2%) of hydroxyethyl cellulose as a gelling agent and the samples were mixed. After gelation, the samples were tested for stability at body temp. The 31 samples were warmed to 32.degree. (ie, skin temp.) and assayed at 0, 1, 2, 3, 4, 5 and 6 h to det. the percent of **hGH** remaining intact in the gel. No significant loss of protein 13 through degrdn. was obsd. in the **hGH** gel formulations stored at 32 14 C. No extra degrdn. products were discovered.

L35 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2000 ACS
AN 1999:325822 CAPLUS
DN 130:343034
TI Histidine compounds for decreasing self-association of polypeptides for **transdermal** delivery
IN Leung, Iris Ka Man
PA Alza Corporation, USA
SO PCT Int. Appl., 65 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A61K047-18
ICS A61K038-28
CC 63-6 (Pharmaceuticals)
Section cross-reference(s): 2
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9924071	A1	19990520	WO 1998-US23298	19981103
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	AU 9913751	A1	19990531	AU 1999-13751	19981103
	EP 1030688	A1	20000830	EP 1998-957511	19981103
	R: DE, ES, FR, GB, IT				

PRAI US 1997-969217 19971112
WO 1998-US23298 19981103
AB Methods for decreasing the tendency for a polypeptide drug to self-assoc. are disclosed. The methods utilize histidine compds. such as L-histidine or glycyl-L-histidine and allow for more efficient delivery of polypeptide
agents using **transdermal** delivery techniques.
ST insulin self assocn inhibitor histidine **transdermal** delivery
IT Self-association
Transdermal drug delivery systems
(histidine compds. for decreasing self-assocn. of polypeptides for **transdermal** delivery)
IT .beta.-Lactoglobulins
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(self-assocn. of; histidine compds. for decreasing self-assocn. of polypeptides for **transdermal** delivery)
IT 7440-66-6, Zinc, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(-free insulin; histidine compds. for decreasing self-assocn. of polypeptides for **transdermal** delivery)
IT 71-00-1, L-Histidine, biological studies **2489-13-6**, Glycyl-L-histidine
RL: NUU (Nonbiological use, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(histidine compds. for decreasing self-assocn. of polypeptides for **transdermal** delivery)
IT 11061-68-0, Insulin human 133107-64-9, Insulin, 28B-L-lysine-29B-L-proline-human

RL: PEP (Physical, engineering or chemical process); PRP (Properties); THU
(Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(histidine compds. for decreasing self-assocn. of polypeptides for **transdermal** delivery)
IT 9001-63-2, Lysozyme
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(self-assocn. of; histidine compds. for decreasing self-assocn. of polypeptides for **transdermal** delivery)
RE.CNT 8
RE
(1) Gertner, A; WO 9611705 A 1996
(2) Grodsky, G; US 4371523 A 1983 CAPLUS
(3) Lilly Co Eli; EP 0692489 A 1996
(4) Lougheed, W; Diabetologia 1980, V19(1), P1 CAPLUS
(5) Myers, R; US 5312326 A 1994
(6) Novonordisk AS; WO 9212999 A 1992
(7) Prestrelski, S; US 5580856 A 1996 CAPLUS
(8) Soeren, B; WO 9739768 A 1997

L35 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2000 ACS
AN 1999:325776 CAPLUS
DN 130:357166
TI Buffered drug formulations for **transdermal** **electrotransport** delivery
IN Leung, Iris Ka Man; Cormier, Michel J. N.; Sendelbeck, Sara Lee; Muchnik, Anna
PA Alza Corporation, USA
SO PCT Int. Appl., 51 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A61K009-00
ICS A61K047-18
CC 63-6 (Pharmaceuticals)
Section cross-reference(s): 1, 2
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9924015	A1	19990520	WO 1998-US23411	19981103
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9913024	A1	19990531	AU 1999-13024	19981103
EP 1028706	A1	20000823	EP 1998-956518	19981103
R: DE, ES, FR, GB, IT				

PRAI US 1997-969217 19971112
WO 1998-US23411 19981103
AB Buffered drug formulations for **transdermal** **electrotransport** delivery are disclosed. The formulations utilize a dipeptide as a buffer and allow for more efficient **electrotransport** delivery of drugs, e.g., polypeptide drugs, via the **transdermal** route. A sufficient quantity of His-Gly from was added to distd. water to make a 12.5 mM buffer soln. having a pH of 21
6.75. A human growth hormone (hGH) formulation obtained from contained growth hormone, mannitol and glycine in the following proportions; 1:5:1. The original hGH formulation was subjected to purifn. (diafiltration against 12.5 mM His-Gly buffer to remove the mannitol and glycine) and the

hGH concn. was adjusted to about 20 mg/mL via ultrafiltration. Aliquots of 250 .mu.L of the resulting hGH stock soln. were placed into Eppendorf tubes, each contg. 5 mg (2%) of hydroxyethyl cellulose as a gelling agent and the samples were mixed. After gelation, the samples were tested for stability at body temp. The 31 samples were warmed to 32.degree. (ie, skin temp.) and assayed at 0, 1, 2, 3, 4, 5 and 6 h to det. the percent of hGH remaining intact in the gel. No significant loss of protein 13 through degrdn. was obsd. in the hGH gel formulations stored at 32 14 C. No extra degrdn. products were discovered.

ST buffered drug formulation **transdermal electrotransport** delivery; dipeptide buffered formulation **transdermal electrotransport**

IT Buffers
Drug transport
Electrolytes
Ionization
Transdermal drug delivery systems
(buffered drug formulations for **transdermal electrotransport** delivery)

IT Peptides, biological studies
Proteins (general), biological studies
RL: BPR (Biological process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(buffered drug formulations for **transdermal electrotransport** delivery)

IT Dipeptides
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(buffered drug formulations for **transdermal electrotransport** delivery)

IT 305-84-0, Carnosine 306-14-9 584-85-0, Anserine 2488-11-1
2489-13-6 2578-58-7 3253-17-6 3261-80-1 3788-44-1
4685-12-5 5891-53-2 7219-59-2 7763-65-7 13589-07-6 14486-12-5
15706-88-4 15706-89-5 16874-75-2 16874-81-0 20556-18-7
20930-58-9 21435-29-0 21438-60-8 22677-56-1 23403-90-9
33367-37-2 35170-01-5 35979-00-1 37700-85-9 38062-72-5
41658-60-0 45234-02-4 53634-28-9 55831-93-1 58471-53-7
67726-09-4 70904-56-2 76019-15-3 92027-43-5 97284-12-3
104018-08-8 129050-48-2 142879-28-5 158691-82-8 224638-06-6
224638-13-5 224638-19-1 224638-52-2 224638-75-9 224639-00-3
224639-35-4 224639-41-2 224639-46-7 224639-57-0
RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(buffered drug formulations for **transdermal electrotransport** delivery)

IT 12629-01-5, Human growth hormone
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(buffered drug formulations for **transdermal electrotransport** delivery)

IT 14265-44-2, Phosphate, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(buffered drug formulations for **transdermal electrotransport** delivery)

RE.CNT 3
RE
(1) Bjoern, S; WO 9739768 A 1997
(2) Green, P; Journal of Controlled Release 1996, V41(1/02), P33
(3) Novonordisk AS; WO 9312812 A 1993

L35 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2000 ACS
AN 1995:786590 CAPLUS
DN 123:328850
TI Effects of buffer concentration on the electrophoretic behaviors of small peptides in capillary zone electrophoresis

AU Chen, Nong; Wang, l.; Zhang, Yukui
CS Dalian Inst. of Chemical Physics, Chinese Academy of Sciences, Dalian, 116012, Peop. Rep. China
SO J. Microcolumn Sep. (1995), 7(3), 193-8
CODEN: JMSEEJ; ISSN: 1040-7685
DT Journal
LA English
CC 80-4 (Organic Analytical Chemistry)
Section cross-reference(s): 34
AB Unlike the electroosmotic flow, the electrophoretic mobilities of small peptides in capillary zone electrophoresis (CZE) were invariant over the buffer concn. range studied. Migration of these peptides in CZE is a electroosmotic-governed process. The quant. linear relations between the logarithm of migration times (log tm) and the reciprocal of column temp. were studied under different buffer concns. to study the activation energies of diffusion (AED) as the function of the buffer concn. The preexponential factors were quant. correlated with the structural parameters of the peptides studied.
ST peptide capillary zone electrophoresis buffer effect
IT Buffer substances and systems
(effects of buffer concn. on electrophoretic behaviors of small peptides in capillary zone electrophoresis)
IT Peptides, analysis
RL: ANT (Analyte); ANST (Analytical study)
(effects of buffer concn. on electrophoretic behaviors of small peptides in capillary zone electrophoresis)
IT Borates
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(effects of buffer concn. on electrophoretic behaviors of small peptides in capillary zone electrophoresis)
IT Phosphates, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(effects of buffer concn. on electrophoretic behaviors of small peptides in capillary zone electrophoresis)
IT Electrophoresis and **Ionophoresis**
(zone, capillary, effects of buffer concn. on electrophoretic behaviors
of small peptides in capillary zone electrophoresis)
IT 556-50-3 **2489-13-6** 6491-25-4 13123-35-8 14486-03-4
16422-05-2, Gly-ala-gly 23576-42-3 104005-33-6 170469-13-3
RL: ANT (Analyte); PRP (Properties); ANST (Analytical study)
(effects of buffer concn. on electrophoretic behaviors of small peptides in capillary zone electrophoresis)

L35 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2000 ACS
AN 1994:245747 CAPLUS
DN 120:245747
TI Correlation free-solution capillary electrophoresis migration times of small peptides with physicochemical properties
AU Chen, N.; Wang, L.; Zhang, Y. K.
CS Dalian Inst. Chem. Phys., Chin. Acad. Sci., Dalian, 116012, Peop. Rep. China
SO Chromatographia (1993), 37(7-8), 429-32
CODEN: CHRGB7; ISSN: 0009-5893
DT Journal
LA English
CC 34-3 (Amino Acids, Peptides, and Proteins)
Section cross-reference(s): 22
AB A series of small peptides contg. varying degree of charge and size was used to study the effects of physicochem. properties on migration in free-soln. capillary electrophoresis (FSCE). A semiempirical relationship
between migration time under acidic conditions and the square root of mol.
wt. divided by the quantity of the no. of the pos. ionizable groups has been established. The ionization of the carboxyl terminal group in the

polypeptides is negligible under acidic conditions. The relationship developed from this work has been used for the prediction of migration parameters in free soln. capillary electrophoresis.

ST peptide capillary electrophoresis migration correlation; structure property peptide electrophoresis migration

IT Molecular structure-property relationship
(of capillary electrophoresis migration times and physiochem. properties of peptides)

IT Peptides, properties
RL: RCT (Reactant)
(predicted capillary electrophoresis migration time of, via correlation of physiochem. properties)

IT Electrophoresis and **Ionophoresis**
(capillary, of peptides, correlation of migration times and physiochem. properties of)

IT 554-94-9, Glycylmethionine 556-33-2, Glycylglycylglycine 556-50-3, Glycylglycine 637-84-3, Tetraglycine 704-15-4, Glycylproline 837-83-2, Glycylprolylalanine 869-19-2, Glycylleucine 926-79-4, Tetraalanine 1948-31-8, Alanylalanine 1963-21-9, Glycylvaline **2489-13-6**, Glycylhistidine 2577-40-4, Phenylalanylphenylalanine 2578-81-6, Phenylalanylphenylalanylphenylalanine 3303-31-9, Leucylleucine 3321-03-7, Glycylphenylalanine 3695-73-6, Glycylalanine 3887-13-6, Hexaglycine 4306-24-5, Glycylleucyltyrosine 4685-12-5, Glycylaspartic acid 5874-90-8, Alanylalanylalanine 6234-26-0, Glycylglycylphenylalanine 6491-25-4, Glycylalanylalanine 7093-67-6, Pentaglycine 7349-78-2, Methionylmethionine 7361-43-5, Glycylserine 7412-78-4, Glycylglutamic acid 7451-76-5, Glycylglycylhistidine 10183-34-3, Pentaalanine 10329-75-6, Leucylleucylleucine 14486-15-8 14656-09-8, Glycylphenylalanylglycine 14857-82-0, Glycylglycylleucine 16422-05-2, Glycylalanylglycine 19729-30-7, Glycylglycylalanine 68171-98-2 68172-04-3 104005-33-6
RL: RCT (Reactant)
(correlation of capillary electrophoresis migration time and physiochem. properties of)

IT 7532-36-7 65189-71-1 71937-87-6 121765-55-7 121765-56-8 121765-57-9 121765-58-0 121765-59-1 121765-60-4 121765-61-5 121765-62-6
RL: RCT (Reactant)
(predicted capillary electrophoresis migration time of, via correlation of physiochem. properties)

L35 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2000 ACS

AN 1990:115188 CAPLUS

DN 112:115188

TI Capillary zone electrophoresis of histidine-containing compounds

AU Stover, Frederick S.; Haymore, Barry L.; McBeath, Randy J.

CS Cent. Res. Lab., Monsanto Co., St. Louis, MO, 63167, USA

SO J. Chromatogr. (1989), 470(1), 241-50
CODEN: JOCRAM; ISSN: 0021-9673

DT Journal

LA English

CC 9-7 (Biochemical Methods)
Section cross-reference(s): 80

AB Capillary zone electrophoresis was tested for the sepn. of angiotensins, cationic heptapeptides, and model histidine derivs. Good sepn. efficiencies were seen for peptides and model compds. with neg.-to-small pos. net charges. For net charge greater than +2, the addn. of putrescine to pH 6 buffer greatly suppresses ion exchange at anionic sites on fused silica. When operating at pH values where histidine groups are neutral, the addn. of Zn2+ allows sepns. based on metal, rather than proton, binding. Sepn. efficiencies and relative migration times are dependent on

capillary length when ion-exchange behavior occurs.
ST capillary zone electrophoresis histidine deriv; peptide histidine sepn electrophoresis
IT Peptides, preparation
RL: PROC (Process)
(histidine-contg., sepn. of, by capillary zone electrophoresis)
IT Electrophoresis and **Ionophoresis**
(zone, capillary, of histidine-contg. compds.)
IT Electrophoresis and **Ionophoresis**
(zone, capillary, app., for sepn. of histidine-contg. compds.)
IT 110-60-1, Putrescine 7440-66-6, Zinc, analysis
RL: ANST (Analytical study)
(histidine derivs. sepn. by capillary zone electrophoresis in presence of)
IT 71-00-1, L-Histidine, analysis 71-00-1D, L-Histidine, derivs. 484-42-4
1499-46-3, L-Histidine methyl ester **2489-13-6**, Glycyl-L-histidine 2497-02-1, N-Acetyl-L-histidine 4474-91-3 13602-53-4, Angiotensin III 125676-70-2 125676-71-3 125676-72-4
RL: PROC (Process)
(sepn. of, by capillary zone electrophoresis)

L35 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2000 ACS
AN 1989:493279 CAPLUS
DN 111:93279
TI Spacer performance in the cationic isotachophoresis of proteins
AU Stover, Frederick S.
CS Cent. Res. Lab., Monsanto Co., St. Louis, MO, 63167, USA
SO J. Chromatogr. (1989), 470(1), 201-8
CODEN: JOCRAM; ISSN: 0021-9673
DT Journal
LA English
CC 9-7 (Biochemical Methods)
AB Performance of narrow-range ampholytes and a discrete spacer mixt. was evaluated for improved protein sepns. by cationic isotachophoresis. A spacer mixt. contg. 22 cations was developed and relative step heights of components are presented. Different ampholytes and the discrete spacer give unique results for test mixts. of model proteins. Although no spacer mixt. can be universally recommended, discrete spacers offer the possibility of optimizing sepns. based on component selection. An example of optimizing a sepn. of 5 model proteins is presented.
ST cationic isotachophoresis protein spacer
IT Cations
(as spacers, in protein sepn. by isotachophoresis)
IT Conalbumins
Myoglobins
Ovalbumins
Proteins, analysis
RL: PROC (Process)
(sepn. of, by cationic isotachophoresis, spacers in)
IT Electrophoresis and **Ionophoresis**
(isotachophoresis, cationic, of proteins, spacers in)
IT Lactoglobulins
RL: PROC (Process)
(.beta.-, A, sepn. of, by cationic isotachophoresis, spacers in)
IT Lactoglobulins
RL: PROC (Process)
(.beta.-, B, sepn. of, by cationic isotachophoresis, spacers in)
IT 10182-91-9, Dodecyltrimethylammonium 10549-76-5, Tetrabutylammonium 13010-31-6, Tetrapropylammonium 15959-61-2, Tetrapentylammonium 56-12-2, .gamma.-Aminobutyric acid, uses and miscellaneous 56-87-1, Lysine, uses and miscellaneous 60-27-5, Creatinine 60-32-2, .epsilon.-Aminocaproic acid 66-40-0, Tetraethylammonium 71-00-1, Histidine, uses and miscellaneous 74-79-3, Arginine, uses and

miscellaneous 77-86-1, Tris 102-69-2, Tripropylamine 102-71-6, uses and miscellaneous 102-82-9, Tributylamine 115-69-5, Ammediol 124-22-1, Dodecylamine 1002-57-9, 8-Aminocaprylic acid **2489-13-6**, Glycylhistidine 6899-10-1 7535-00-4
RL: ANST (Analytical study)
(as spacer, in isotachophoresis of proteins)

IT 9001-03-0, Carbonic anhydrase 9001-63-2, Lysozyme 9001-99-4, Ribonuclease A 9002-08-8, Trypsinogen 9007-43-6, Cytochrome c, analysis
RL: PROC (Process)
(sepn. of, by cationic isotachophoresis, spacers in)

L35 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2000 ACS
AN 1984:206066 CAPLUS
DN 100:206066
TI Microelectrophoretic and chromatofocusing techniques for the quantitative separation and identification of imidazole derivatives
AU Kamel, Mamdouh Y.; Maksoud, Salwa A.
CS Biochem. Dep., Natl. Res. Cent., Cairo, Egypt
SO J. Chromatogr. (1984), 283, 331-40
CODEN: JOCRAM; ISSN: 0021-9673
DT Journal
LA English
CC 9-10 (Biochemical Methods)
Section cross-reference(s): 10, 13
AB The sepn. of 11 naturally occurring imidazole compds. by low-voltage electrophoresis on cellulose acetate by using a wide-range buffer with pH range 3.5-11.5 is described. Detection was with sulfanilic acid spray reagent, elution, and photometric detns. at 500 nm. The recoveries of urocanic acid, histamine, and histidine varied 80-100% for concns. of 1-7 .mu.g. The results were reproducible, and the technique could be useful for the rapid identification and detn. of histidine metabolites. A mixt. of 9 imidazole derivs. was resolved on Dowex 50WX8 (200-400 mesh) by using a linear pH gradient of the wide-range buffer. Detection was by the sulfanilic acid method of M. Y. Kamel and S. A. Maksoud (1978). The elution pH values of the different imidazole compds. varied from +0.6 to -0.4 pH units above or below their isoelec. pH values. The recoveries of the stds. ranged 86-98%. This technique was applied successfully to the sepn. of histidine metabolites in Aerobacter aerogenes culture medium.
ST imidazole deriv detn chromatofocusing electrophoresis; microelectrophoresis imidazole deriv detn; Aerobacter histidine metabolite detn
IT Enterobacter aerogenes
(histidine metabolite detn. in culture medium for, by chromatofocusing)
IT Klebsiella pneumoniae
(histidine metabolites detn. in culture medium for, by chromatofocusing)
IT Chromatography, column and liquid
(focusing, of imidazole derivs. and histidine metabolites)
IT Electrophoresis and **Ionophoresis**
(micro-, of imidazole derivs., on cellulose acetate)
IT 288-32-4D, derivs.
RL: ANT (Analyte); ANST (Analytical study)
(detn. of, by chromatofocusing and microelectrophoresis on cellulose acetate)
IT 51-45-6, analysis 71-00-1, analysis 104-98-3 288-32-4, analysis 305-84-0 497-30-3 501-28-0 645-65-8 90167-43-4
RL: ANT (Analyte); ANST (Analytical study)
(detn. of, by chromatofocusing or microelectrophoresis)
IT 104-98-3 360-97-4 **2489-13-6**
RL: ANT (Analyte); ANST (Analytical study)
(detn. of, by microelectrophoresis)
IT 71-00-1D, metabolites 28302-23-0

RL: ANT (Analyte); ANST (Analytical study)
(detn. of, in Aerobacter aerogenes culture medium by chromatofocusing)

L35 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2000 ACS
AN 1984:626210 CAPLUS
DN 101:226210
TI Discrete non-UV-absorbing anionic and cationic spacers for isotachophoretic separations at high and low pH, respectively
AU Husmann-Holloway, S.; Borriss, E.
CS Inst. Med. Mikrobiol., Med. Hochsch., Hannover, D-3000/61, Fed. Rep. Ger.
SO Anal. Prep. Isotachophoresis, Proc., Int. Symp. Isotachophoresis, 3rd (1984), Meeting Date 1982, 63-70. Editor(s): Holloway, Christopher J. Publisher: de Gruyter, Berlin, Fed. Rep. Ger.
CODEN: 52ORAU
DT Conference
LA English
CC 9-7 (Biochemical Methods)
AB A catalog of 49 spacer ion listed in the order of increasing relative mobility is given for an anionic electrolyte system at high pH as well as catalog of 22 spacer ions in a cationic electrolyte system at low pH for use in isotachophoretic sepns. Tables are also given of the relative ref.
unit values of the spacers. A practical application is given of the spacer catalogs for the sepn. of a mixt. of proteins. It is cautioned that the uncrit. use of discrete spacers, e.g., for the anal. of heterogeneous protein mixts., can give misleading results.
ST isotachophoresis spacer cation electrolyte system; anion electrolyte spacer isotachophoresis protein
IT Proteins
RL: ANST (Analytical study)
(isotachophoresis of, anionic and cationic spacers for)
IT Electrophoresis and **Ionophoresis**
(isotachophoresis, of proteins, anionic and cationic spacers for)
IT 51-35-4 56-12-2, uses and miscellaneous 56-40-6, uses and miscellaneous 56-41-7, uses and miscellaneous 56-45-1, uses and miscellaneous 56-84-8, uses and miscellaneous 56-85-9, uses and miscellaneous 56-86-0, uses and miscellaneous 107-95-9 107-97-1 327-57-1 541-48-0 556-50-3 686-50-0 687-69-4 1492-24-6 2187-07-7 **2489-13-6** 3303-31-9 3695-73-6 3918-94-3 3989-97-7 4432-31-9 5874-90-8 6556-12-3 6600-40-4 6915-15-7 7536-21-2 10329-75-6 13073-35-3 13588-95-9 27025-41-8 34322-87-7
64577-64-6 93414-38-1 61-90-5, uses and miscellaneous 62-57-7 63-68-3, uses and miscellaneous 63-91-2, uses and miscellaneous 70-18-8, uses and miscellaneous 70-47-3, uses and miscellaneous 71-00-1, uses and miscellaneous 72-18-4, uses and miscellaneous 72-19-5, uses and miscellaneous 73-22-3, uses and miscellaneous 87-69-4, uses and miscellaneous 104-14-3 142-62-1, uses and miscellaneous 144-90-1
RL: ANST (Analytical study)
(spacers, for protein isotachophoresis in anionic electrolyte system at high pH)
IT 70-26-8 115-69-5 124-09-4, uses and miscellaneous 141-43-5, uses and miscellaneous 1002-57-9 3416-24-8 102-71-6, biological studies 106-50-3, uses and miscellaneous 302-01-2, uses and miscellaneous 305-62-4 7439-89-6, uses and miscellaneous 7439-93-2, uses and miscellaneous 7439-95-4, uses and miscellaneous 7440-23-5, uses and miscellaneous 7440-39-3, uses and miscellaneous 7440-50-8, uses and miscellaneous 7440-70-2, uses and miscellaneous
RL: ANST (Analytical study)
(spacers, for protein isotachophoresis in cationic electrolyte system at low pH)
IT 56-87-1, properties 60-27-5 60-32-2 71-00-1, properties 74-79-3, properties 77-86-1

RL: PRP (Properties)
(spacers, for protein isotachophoresis in cationic electrolyte system at low pH)

L35 ANSWER 9 OF 9 CAOLD COPYRIGHT 2000 ACS
AN CA56:9391a CAOLD
TI standard **ionophoretic** mobilities of various biochemicals in amaranth units, at several pH values from 3.3 to 9.3
AU Thornburg, W. W.; Werum, L. N.; Gordon, H. T.
IT 87-56-9 103-76-4 140-31-8 486-35-1 488-81-3 498-59-9
544-05-8 554-94-9 617-62-9 637-84-3 968-21-8 997-62-6
1655-51-2 1655-54-5 1655-55-6 1655-56-7 1655-65-8 2313-19-1
2489-13-6 2639-79-4 2867-15-4 3054-56-6 3112-53-6
3185-97-5 3373-53-3 3790-56-5 3950-28-5 5746-90-7 5984-80-5
6220-63-9 6859-99-0 7412-78-4 7563-03-3 10457-26-8 10466-72-5
10466-75-8 13552-61-9 14449-03-7 14449-04-8 15159-83-8 15159-84-9
15246-79-4 15246-80-7 16202-50-9 17598-81-1 23945-44-0 31796-57-3
58886-45-6 64449-12-3 71927-65-6 89792-40-5 89921-48-2 90841-06-8
91347-22-7 91465-69-9 91962-25-3 92495-39-1 92654-30-3 93307-06-3
93318-36-6 94713-87-8 94877-89-1 96847-27-7